

CLAIMS

I claim:

- 5 21. A method of analysis comprising the steps of:
- (a) labeling molecules in a first sample each with a label;
 - (b) mixing the labeled molecules of said first sample with molecules of a second
10 sample into a mixture of molecules;
 - (c) contacting said mixture of molecules with an array of binding agents; and
 - (d) detecting said label from said array.
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22. The method of analysis of claim 21 further comprising a step of:
- 20 comparing the detecting data of said label from said array to a detecting data from another array.
23. The method of analysis of claim 21 further comprising a step of:
- 25 comparing a detected amount of said label at one spot within said array to a detected amount of said label at another spot within said array.
24. The method of analysis of claim 21 further comprising a step of:
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Substitute sheet 26

comparing a relative amount of a type of molecule between said first sample and said second sample through an observation of said label.

5 25. The method of analysis of claim 21 wherein said label is a radioactive label.

26. The method of analysis of claim 21 wherein said first sample is labeled by tritium exchange.

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27. The method of analysis of claim 21 wherein said first sample is labeled by neutron bombardment.

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28. The method of analysis of claim 21 wherein said first label is a distinguishable characteristic of said molecules other than an incorporated chemical tag.

20 29. The method of analysis of claim 21 wherein said array further comprising an immobilized label as a means for standardizing a comparison between at least two arrays.

25 30. A method of labeling a sample for analysis using neutron bombardment whereby a resulting label is a radioactive isotope or a heavy isotope.

30 31. The method of claim 30 wherein a resulting label is a post-decayed element of a resulting radioactive isotope.

Substitute sheet 27

32. The method of labeling of claim 30 wherein said sample is a biological sample.
33. The method of labeling of claim 30 wherein said sample comprises at least one
5 protein.
34. A method of analysis comprising the steps of:
- 10 (a) providing a first sample of labeled molecules;
- (b) mixing said first sample of labeled molecules with a second sample of
molecules to create at least two different mixtures each having a different ratio
of said first sample to said second sample;
- 15 (c) applying said different mixtures to similar arrays of binding agents; and
- (d) comparing signals between said similar arrays whereby a relative abundance
of molecules between said first sample and said second sample is interpreted.
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35. The method of claim 34 wherein said first sample and said second sample originated
from comparable sources.
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36. The method of claim 34 wherein a quantification of a type of molecule in said second
sample is sought whereas said type of molecule is known to be present in said first
sample.
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Substitute sheet 28

37. The method of claim 36 wherein said array comprises a binding agent specific for said type of molecule.
- 5 38. An array comprising an immobilized label as a means for standardizing comparison made between at least two arrays.
39. Said array of claim 38 wherein said label includes a radioactive isotope.
- 10 40. A method of analysis comprising the steps of:
- 15 (a) labeling molecules in a first sample with a first radioactive isotope;
- (b) labeling molecules in a second sample with a second radioactive isotope;
- (c) combining said first sample and said second sample into a mixture;
- 20 (d) contacting said mixture with an array of binding agents; and
- (e) detecting radiation from said array.
- 25 41. The method of analysis of claim 40 further comprising a step of selectively quantifying radiation originated from said first radioactive isotope versus said second radioactive isotope using these isotopes' difference in half-life.

Substitute sheet 29

42. The method of analysis of claim 40 further comprising a step of selectively quantifying radiation originated from said first radioactive isotope versus said second radioactive isotope using these isotopes' difference in radiation energy.

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43. The method of analysis of claim 40 further comprising a step of focusing said radiation from said array using a magnetic field.

Substitute sheet 30